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THE ELEMENTARY SCHOOL TEACHER

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FIELD-WORK AND NATURE-STUDY

PART I

THE PEDAGOGICAL ASPECT

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Field-work as used in this paper may be broadly interpreted as referring to any type of school-directed activity of such a character as to bring the children into direct contact with their out-of-door nature environment, from the standpoint of their own interests in nature. From this point of view the incorporation of the interests and experiences derived through this contact is most desirable and essential in elementary education.

It seems due time that steps should be taken, especially in our city schools, for bringing about more effective means and demands, through our school work, for taking children from the schoolrooms into gardens, truck-patches, parks, fields, and woodlands for the purpose of extending and intensifying their sense-contact experience with natural objects and phenomena and of fostering the "old naturalist" love of nature which seems so essential to child life.

No one subject, recognized as belonging to the elementary-school curriculum, has been so widely discussed, has received so much thoughtful consideration, during the past five years, as that of nature-study. It has been reviewed in all of its phases; its old aspect and its new; its aims and purposes; what it is and what it is not; and how it should be taught. Much of good has

come out of all of this and the nature-study movement is stronger today, filled with more promise for effectiveness, than ever before. But this plea for the study of nature in our elementary schools is not new. Through the entire period of the past century the plea for the incorporation of more of the study of nature into our elementary-school curriculum never ceased. The conviction that this seemingly instinctive, deep-seated interest of children in nature should be a very potent factor in elementary-school work, has never been absent.

Yet during the century there never was a time when the study of nature gained sufficient foothold in the schools to insure its survival when it came into contention with the languages, number, history, literature, geography, etc. Doubt and confusion still exists in the minds of both teachers and parents as to the real purpose of nature-study or its relative educational value.

In the face of all that has been said and done, we need to seek the reason for this doubt and confusion. I believe that the answer is not to be found in the subject-matter of nature-study, but in our general conception of the aims and purposes of elementary education as a whole and the method of procedure by which these purposes are to be realized. Up to date we have no agreed-upon, conscious educational standards by which to test the educational-value-claim of nature-study nor of any other elementary-school subject of thought content. Our educational theories are to a certain extent formulated in the light of scientific progress, but our educational practices are directed by old traditions.

Our elementary-school system was organized to administer a course of study through the medium of textbooks and peculiarly adapted to schoolroom and class-group work. Studies which have been added from time to time have had to adapt themselves to this schoolroom and class-group idea with such modifications as laboratories and workshops. During its period of organization the public was dominated by the conception that education consisted in acquiring a certain fund of knowledge, or degrees of skill, in certain systems of subjects which man had arranged for study. And the school struggle was, and is yet, to get pupils to

learn these formal systems. School work has fallen time and again into a dull routine and the warning that "the facts of science have been so abundantly acquired, so thoroughly systematized, and rendered so easily available through textbooks, manuals, and models that we frequently resort to the teaching of these schemes of knowledge instead of the knowledge itself" has had to be sounded at frequent intervals. Books, supplemented by the teacher, have been the reservoirs of knowledge. In the meantime the effort required to interest pupils in these studies, the meager results for the time and energy expended, the constant failure of subjects to stimulate any steady interest, and to impart to the pupil the delight and power they promised, have stimulated investigations into the act of teaching and learning and the principles involved.

As a result of these investigations there has been a gradual facing about in educational theory with a much slower adjustment in school organization and teaching methods. We have not yet been able to effect a coalescence of the two ideas, "education the act of learning subject," in the light of classical tradition; and "education for power and development" in the light of scientific progress. We find ourselves constantly attempting, urged forward by our old conceptions and established customs, to reach our present scientific conceptions through old traditional practices.

The facts relating to the purpose of elementary schools and the results which are desired are quite generally agreed upon. It is almost universally accepted that these schools are established for the purpose of educating children and that education has, as a part of its function, to do with aiding children in acquiring a certain skill in the use of number, spelling, reading, writing, drawing, etc., and a certain fund of information relating to the more fundamental facts in history, literature, sciences, etc. It is also to a certain extent accepted that education should have to do with individual development, generating power, and initiative, with growth into social efficiency.

Reduced to its simplest terms we have involved in elementary school work two prime factors: (1) Various subjects of study,

the pursuit of which involves the acquirement of certain types and degrees of skill and information, and (2) the pupil. The process of educating is conceded to be through some interrelation of pupil with subject or subject with pupil. Our view-point as teachers, as to the desired nature of this interaction, is the crucial thing in educating. "What gets to the child is dependent upon what is in the mind of the teacher and how it is in his or her mind." In this, as has been pointed out, there exist two dominant ideals. Either these subjects which make up the course of study are selected as types of knowledge to be learned by the pupil, the amount learned or the skill acquired being the measure of educational progress; or they represent types of subjects, means, for the development of desired qualities in physique, mentality, skill, working efficiency, the qualities and power gained in these directions being the measure of educational progress. This distinction as to our attitudes in teaching may not at all times appear clear-cut or essential, but the path of elementary-school progress is strewn with the wrecks of methods and the mutilated forms of noble purposes which were foundered on the conception that teaching is wholly concerned with inducing children to learn the subject; and these methods have ranged from Grad Grinds through all types of (un)pedagogical novelties warranted to induce, lead, stimulate, or trick the pupil to learn the desired subject. Accompanying the growth of our knowledge of the laws which underlie human development has come a growing belief and confidence that the subjects, making up the elementary-school curriculum, may be so taught that the act of learning will prove the vital and essential factor in education; a conviction that children's interests may, and should, furnish the basis for educational method and progress. But to realize this we must find out their attitudes and view-points, and direct them rather than ignore them and set them to work from our own view-points. Paralleling this conception has come a fuller appreciation of the law of self-activity as an essential and fundamental condition for growth. This does not imply merely the self-effort of a pupil in acquiring certain facts pertaining to some subject which is taught, but it implies at its very foundation that

this effort or action shall be a response to some deep-seated feeling or need, interest, desire, or conscious duty on the part of the pupil, and that the effort put forth shall be a direct response to this impulse from within the pupil. In making these assertions I am not unmindful of exceptional occasions when the present desires and interests of the child must give way to the needs and duties of the occasion, but these happenings in no way nullify the deeper fact that, for both the child and the adult, the best of education comes through direct response to individual interests and needs as determined by the individual himself.

No one seriously questions that, with an adult, power and control are obtained through the realization of personal ends and problems, through personal selection of means and materials which are relevant, and through personal adaptation and application of what is thus selected, together with whatever of experimentation and of testing is involved in this effort. Practically every one of these three conditions of increase in power for the adult is denied for the child. For him problems and aims are determined by another mind. For him material that is relevant or irrelevant is selected in advance by another mind. And upon the whole there is such an attempt to teach him a ready-made method for applying his materials to the solution of his problems, or the reaching of his ends, that the factors of selection and experimentation are reduced to a minimum. With the adult we unquestioningly assume that an attitude of personal inquiry, based upon the possession of a problem which interests and absorbs, is a necessary precondition of mental growth. Alertness is our ideal in the one case; docility in the other. With the one we assume that power of attention develops in dealing with problems which make a personal appeal, and through personal responsibility for determining what is relevant. With the other we provide next to no opportunity for the genesis and evolution of problems out of immediate experience, and allow next to no free mental play for selecting, assorting, and adapting the experiences and ideas that make for their solution.¹

The desirability of acquiring a comprehensive fund of useful information, a high degree of skill, may pass unquestioned. But whether, in our efforts to induce children to acquire these, we do not too frequently suppress qualities without which there can be no great efficiency in either knowledge or skill is open to question.

The assumption is that no method can be adjudged right or wrong, no subject good or poor, no aim sufficient or insufficient,

¹ Dewey, *Psychology and Social Progress*.

except as they, in combination, influence the child and give scope in opportunity for approximating these conditions essential for growth. If field-work, as a method of school work, offers opportunity for the fulfilment of these requirements of conditions for growth—since no one can question the value of the subject-matter itself—then the problem which we have failed to meet is that of adjustment. Nature-study is in essence an out-of-door study, and it will succeed only to the degree in which we can afford children the out-of-door advantages which the study demands. If nature-study is to succeed we must be sure that it is really a study of nature. The inability of schools to establish a method of procedure which extends and incorporates into its work the out-of-door interests of children in nature has been the basal cause of the frequent failures in nature-study and its slow progress in securing a strong foothold in the curriculum. We have failed, or rather refused, to recognize seriously in school work the factor most vital in the interrelation of children with nature, namely that impulse from within the child which we term “love of nature.” We seem to grope in the dark when we try to teach anything less crude than conscious knowledge. We have practically failed to direct or develop in any broad way those inner feelings or emotions which stimulate individual effort and vitalize the facts in learning. Nor yet have we been keen to detect the environmental conditions which generate and develop the feelings in a wholesome way. Wherever, in teaching, we have tried to recognize the importance of these feelings and to direct them, as in the teaching of ethics, morality, and religion, we have drifted to meaningless formalism or to sentimentality, until at the present time we are so thoroughly adrift in the matter that we avoid it altogether. So in nature-study, armed with our fragments of nature, books, and stories, we try to accomplish through formal teaching that which can only be accomplished by free and direct contact with out-of-door nature. But after this contact, if we are wise enough to utilize the best which results from this contact, we may accomplish with ease that which we failed to accomplish with effort before. Feeling, in nature, cannot be detached from facts and information without

degenerating into sentimentality which on the whole is worse for the individual than formalism.

Trying to respect and take into account children's feeling for nature does not imply a lack of need or demand for information; it rather implies an increase in subject to meet the demand of that increase in mental capacity which always accompanies genuine interest. No teacher who has ever spent an hour in a rich out-of-door environment with a healthy class of pupils has been nearly so vividly impressed with his fund of information, in relation to their interests and questions, as he has been with his poverty of it. In order to utilize these interests, to enlist them in the service of human development and in the acquirement of knowledge and skill, we must give up our efforts to devise courses and methods which will communicate a fund of human knowledge to the children in the shortest possible time and must find out how to generate and direct interests which will give freedom to self-activity in the direction of that knowledge and skill which we deem essential to civilization.

We need to appreciate in all fulness what John Burroughs means when he says that in his contact with nature he has always "found feeling in advance of intellectualization." What Hall means when he says, "The spirit of botany is where plants and flowers grow; of geology in the field and not in the laboratory or cabinet; and of astronomy in the silence of the open night. . . . Nature is sentiment before it is formulae, idea, or utility." To understand the need of the freedom of outdoors in all of its completeness is to catch the tone of Emerson's feelings when he said:

All is needed by each one;
Nothing is fair or good alone.
I thought the sparrow's note from heaven,
Singing at dawn on the alder bough;
I brought him home, in his nest, at even;
He sings the song but it cheers not now,
For I did not bring home the river and sky;—
He sang to my ear,—they sang to my eye.

This interest and sympathy between the child and nature is not in any sense conscious sentiment, as is frequently true in the

adult, and any attempt to treat it as such must prove fatal. It exhibits itself in an insatiable curiosity and inquisitiveness which, if not suppressed by our own indifference and lack of means, will not be satisfied until the individual has experienced or until he knows. I risk the assertion that there is no sympathetic teacher or parent who does not feel that if she had the wisdom and knowledge to keep alive, to direct and feed this spirit of inquisitiveness, it would lead the child to an acquaintance with nature, a command and control of the elements of the sciences with a sureness and directness possible in no other way. To furnish a method of procedure which will foster this love of nature, which will secure an acquaintance and command of nature knowledge in a wholesome way, which will give a broad experience and a fund of information out of which, in proper season, the various natural sciences may be organized without quenching the fires of interest is the purpose of field-work. If we pursue the matter in a wholesome, genuine way we may rest assured that the pupil will reach in a surer and better way the end which we had hoped to gain through our more formal work. Our experience makes us perfectly aware that our indoor study has not succeeded in any adequate degree in aiding children to "read and enjoy the wonder-book of nature." We need not neglect any of the other purposes of nature-study, in trying to keep alive this interest; nor can we hope to succeed if we do not foster it, or if we conceive the idea that it can be kept alive by anything but free contact with out-of-door nature.